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MILDIL

SUMMARY: Gently undulating sideslopes, plains and drainage lines on Quaternary alluvium and colluvium west of West Wyalong. Dominant soils are moderately deep to deep (>100 cm), imperfectly to moderately well-drained Red and Brown Solodic Soils (Db1.23, Dr2.43; Sodic, Eutrophic and Calcic Red and Brown Chromosols) on sideslopes and drainage depressions. Moderately deep (60-100 cm), moderately well-drained Red Podzolic Soils (Dr4.11; Haplic Eutrophic Red Chromosols) and shallow (<60 cm), stony Red Earths (Gn2.11, Gn2.14; Haplic Eutrophic Red Kandosols) occur on crests and upper slopes.

LIMITATIONS: Water erosion hazard; wind erosion hazard; soil structure decline hazard; shallow, hardsetting (localised), sodic (localised), stony, shallow (localised) soils of low fertility and high erodibility.

LOCATION: Mildil, west of West Wyalong, includes most of the upper reaches and associated tributaries of Humbug Creek and Sandy Creek. It also includes lands to the south and east of West Wyalong. Type location is at Mildil (Area reference 5 00***E, 62 51***N).

CLIMATIC ZONE: 1E and 2B.

GEOLOGY: Quaternary alluvium and minor Ordovician colluvium comprised of phyllites, schists, sandstones, siltstones and occasional volcanics.

LANDFORM: Level to gently inclined slopes with slope gradients <4%. Slopes are gently waning. Elevation ranges from 260 m to 310 m. Local relief is <20 m.

VEGETATION: Extensively cleared open-woodland. Western grey box (*Eucalyptus microcarpa*) and white cypress pine (*Callitris glaucophylla*) are the main tree species. Some mallee eucalyptus (see Blue Mallee (bv) soil landscape) also occur on upper slopes.

Understorey species include wedge-leaf hopbush (*Dodonaea viscosa* ssp. *cuneata*), sweet quandong (*Santalum*

acuminatum), streaked wattle (*Acacia lineata*), hakea wattle (*A. hakeoides*), miljee (*A. oswaldii*), Wyalong wattle (*A. cardiophylla*), purple burr-daisy (*Calotis cuneifolia*), silver cassia (*Cassia artemisioides*) and cough bush (*Cassinia laevis*). Grasses include hairy panic (*Panicum effusum*), small-flowered wallaby grass (*Danthonia setacea*), rough speargrass (*Stipa scabra*) and windmill grass (*Chloris* spp.).

LAND USE: Grazing on native and improved pastures and cropping for cereal and associated crops.

EXISTING LAND DEGRADATION: Moderate to severe gully erosion occurs along Sandy Creek and Humbug Creek and some of their tributaries. Minor sheet erosion occurs on some upper slopes. Severe wind erosion from bare fallow paddocks and areas with recent cultivation can occur.

INCLUDED SOIL LANDSCAPE: Blue Mallee (bv) soil landscape is included on some upper slopes.

GENERAL SOIL DESCRIPTIONS

RED SOLODIC SOILS

Topsoil: dull reddish brown (5YR 4/4) sandy clay loam to sandy loam A1 horizon; hardsetting, massive to weakly pedal; field pH 6.0-6.5. Sharp change to a bleached bright reddish brown (5YR 5/6) A2 horizon; massive and earthy to <25 cm depth. Clear to abrupt boundary to ...

Subsoil: reddish brown (5YR 4/6, 5YR 4/8) medium clay B2 horizon; moderately pedal, smooth-faced peds, slightly plastic; field pH 8.0-9.0. Extends beyond 100 cm depth.

RED EARTHS

Topsoil: dull reddish brown (5YR 4/3) sandy loam A1 horizon; massive, earthy, many coarse fragments; field pH 6.0. A weak A2 horizon is occasionally developed. Abrupt boundary to...

Subsoil: reddish brown (5YR 4/8) sandy clay loam B2 horizon; massive to weakly pedal, many coarse fragments; field pH 6.0 to 120 cm depth (shallower on rocky crests).

RED PODZOLIC SOILS

Topsoil: dark brown (7.5YR 3/4) to dark brown (5YR 3/3) reddish brown (5YR 3/3) sandy loam to sandy clay loam A1 horizon; massive, earthy, non-plastic, non-sticky, very few coarse fragments; field pH 5.5 to 6.0. Abrupt boundary at 10 cm to...

Subsoil: dark reddish brown (5YR 3/4) medium clay B2 horizon; moderately pedal, smooth-faced angular blocky peds (10-20 mm) slightly plastic, moderately sticky, common coarse fragments; field pH 6.0. Extends below 100 cm.

TYPE PROFILE

Brown Solodic Soil (Db1.23; Sodic Eutrophic Brown Chromosol; medium, non-gravelly, clay loamy, clayey).

Location: Humbug Creek (Grid Reference 5 0355*N, 62 4870*E, Soil Data System Card 468).

Landform: Gully.

Land Use: Improved pasture.

Profile drainage: Moderately well-drained.

PROFILE DESCRIPTION

Horizon Description

A1	10-15 cm dark brown (7.5YR 3/4) sandy loam; hardsetting, massive, earthy, non-plastic, non-sticky, crumbly; field pH 6.0. Sharp boundary to...
A2	15-25 cm dark reddish brown (5YR 3/3) sandy clay loam; hardsetting, massive, earthy, non-plastic, non-sticky, crumbly; field pH 6.0. Sharp boundary to...
B2	25-90 cm brown (7.5YR 4/4) light-medium sandy clay; moderately pedal, smooth-faced peds, slightly sticky; field pH 8.5; no segregations.

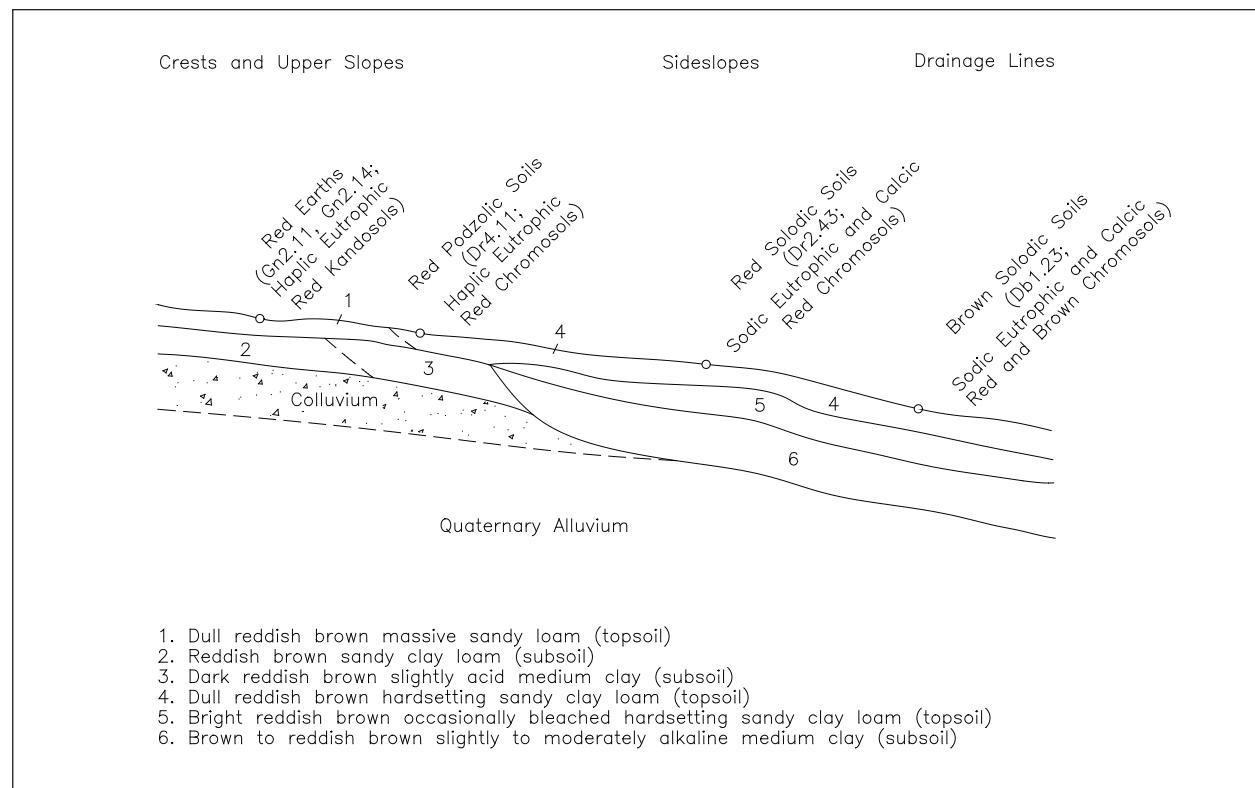
QUALITIES AND LIMITATIONS

SOIL LIMITATIONS:

Hardsetting surfaces (localised)
Stoniness
Low fertility
Sodicity (localised)
Soil structure decline hazard
High erodibility.

LANDSCAPE LIMITATIONS:

Water erosion hazard
Shallow soils (localised)
Wind erosion hazard.



■ Distribution diagram of Mildil soil landscape illustrating the occurrence and relationship of dominant soil materials.

FERTILITY: Soil profile fertility is low. Topsoils tested have low cation exchange capacity with moderate to high levels of exchangeable magnesium, potassium and sodium and moderate to low exchangeable calcium. Subsoils have moderate to high levels of exchangeable magnesium, potassium, sodium and calcium. Phosphorus is deficient for soils and phosphorus sorption capacity is moderate. pH buffering capacity is moderate for all layers. Soils are slightly sodic at depth and non-saline.

ERODIBILITY AND EROSION HAZARD: Erosion hazard is moderate to high for both concentrated and non-concentrated flows. Soils have a high erodibility with soils tested having K factors ranging from 0.058 for topsoils and 0.047 for subsoils.

RECOMMENDATIONS FOR SOIL CONSERVATION

EARTHWORKS: Soils are generally suitable for soil conservation earthworks. Soils tested had earthwork category ratings of J and B for topsoils and D for subsoil. Sandy topsoils may have insufficient fines and too much organic matter in some instances for soil conservation earthworks.

RECOMMENDATIONS FOR SUSTAINABLE LAND USE:

Capable of sustaining both grazing and cropping with the use of appropriate soil conservation measures such as contour banks and conservation farming techniques such as minimum tillage. Excessive cultivation may lead to soil structural decline. Land capability ratings are classes II, III and IV.



Soil Profile Report

SITE DETAILS

Site Location:	Profile 489
Profile Details:	Soil Landscapes of the Forbes 1:250 000 Sheet Survey (1000482), Profile 489, collected from a auger by Mr Dacre King on 16 September, 1994
Map Reference:	MGA Grid Reference: Zone 55, 522213E, 6243395N. 8330 WYALONG (1:100000) map sheet.
Physiography:	hillslope in rises on granite lithology and used for timber/scrub/unused. Slope 4.0% (not recorded), local relief extremely low (< 9m). profile is mod. well drained, erosion hazard is moderate, and no salting evident
Vegetation/Land Use:	extensive clearing at the site, used for timber/scrub/unused, with cropping, timber/scrub/unused in the general area
Surface Condition:	expected to be hard set when dry
Erosion/Land Degradation:	moderate; no salting evident
Soil Hydrology:	profile is moderately permeable and mod. well drained,
Soil Type:	Haplic Eutrophic Red Chromosol (ASC), Red-brown Earth (GSG), Dr2.13 (PPF)
Base of observation:	
Profile Field Notes:	Bedrock - hornfells? green.

SOIL DESCRIPTION

Layer 0

0.00 - 0.00 m

Coarse Fragments: many (20-50%), as parent material, gravel (6-20 mm), coarse gravel (20-60 mm), cobbles (60-200 mm)

Layer 1 Horizon: A1

0.00 - 0.05 m	Texture:	clay loam
	Colour:	(very dark brown) (7.5YR 2/3) [moist] with no recorded mottles
	Structure:	massive
	Coarse Fragments:	many (20-50%), as parent material, fine gravel (2-6 mm), gravel (6-20 mm), coarse gravel (20-60 mm)
	Pans:	not evident
	Segregations:	not evident,
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil

	Moisture/Consistence:	dry, non-sticky, texture modifier test result was no change,
	Field chemical tests:	Field pH is 7.0 (Not recorded), H ₂ O ₂ showed no effervescence
	Sample taken:	none
Layer 2	Horizon: B1	
0.05 - 0.25 m	Texture:	clay
	Colour:	(very dark reddish brown) (5YR 2/3) [moist] with no recorded mottles
	Structure:	moderate pedality
	Coarse Fragments:	common (10-20%), as parent material, fine gravel (2-6 mm), gravel (6-20 mm), coarse gravel (20-60 mm)
	Pans:	not evident
	Segregations:	not evident,
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, slightly sticky, texture modifier test result was no change,
	Field chemical tests:	Field pH is 7.5 (Not recorded), H ₂ O ₂ showed no effervescence
	Sample taken:	none
Layer 3	Horizon: B2	
0.25 - 0.70 m	Texture:	clay
	Colour:	yellowish red (reddish brown) (5YR 4/6) [moist] with no recorded mottles
	Structure:	moderate pedality
	Coarse Fragments:	very few (< 2%), as parent material, fine gravel (2-6 mm), gravel (6-20 mm), coarse gravel (20-60 mm)
	Pans:	not evident
	Segregations:	very few (< 2%), calcareous, soft segregations,
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	moderately moist, slightly sticky, texture modifier test result was no change,
	Field chemical tests:	Field pH is 9.5 (Not recorded), H ₂ O ₂ showed no effervescence
	Sample taken:	none
Layer 4	Horizon: B3	
0.70 - 0.90 m	Texture:	clay
	Colour:	yellowish red (bright reddish brown) (5YR 5/8) [moist] with no recorded mottles
	Structure:	moderate pedality
	Coarse Fragments:	very few (< 2%), as parent material, fine gravel (2-6 mm), gravel (6-20 mm), coarse gravel (20-60 mm)
	Pans:	not evident
	Segregations:	very few (< 2%), calcareous, soft segregations, fine (< 2 mm),
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	moderately moist, slightly sticky, texture modifier test result was no change,
	Field chemical tests:	Field pH is 9.5 (Not recorded), H ₂ O ₂ showed no effervescence

Sample taken: none

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)

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Soil Profile Report

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Soil Profile Report

SITE DETAILS

Site Location:	WEST WYALONG - NEAR RIFLE RANGE
Profile Details:	Soil Landscapes of the Forbes 1:250 000 Sheet Survey (1000482), Profile 494, collected from a auger by Mr Dacre King on 15 September, 1994
Map Reference:	MGA Grid Reference: Zone 55, 520593E, 6248105N. 8330 WYALONG (1:100000) map sheet.
Physiography:	rises and used for timber/scrub/unused. local relief extremely low (< 9m). Surface condition is loose, profile is mod. well drained, erosion hazard is moderate, and no salting evident
Vegetation/Land Use:	limited clearing at the site, used for timber/scrub/unused, with timber/scrub/unused in the general area
Surface Condition:	loose when described, expected to be loose when dry
Erosion/Land Degradation:	moderate; no salting evident
Soil Hydrology:	profile is moderately permeable and mod. well drained, , run on is low and runoff is low
Soil Type:	Red Chromosol (ASC), Red Podzolic Soil (GSG), Dr4.12 (PPF)
Base of observation:	
Profile Field Notes:	Additional veg.: Mallee, daisy bush. No granite evident.

SOIL DESCRIPTION

Layer 0

0.00 - 0.00 m

Coarse Fragments: not evident,

Layer 1 Horizon: A1

0.00 - 0.15 m	Texture:	sandy loam
	Colour:	dark reddish brown (5YR 3/4) [moist] with no recorded mottles
	Structure:	massive (fabric is earthy)
	Coarse Fragments:	not evident,
	Pans:	not evident
	Segregations:	not evident,
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, non plastic, non-sticky, texture modifier test result was no change,

	Field chemical tests:	Field pH is 5.5 (Not recorded), H ₂ O ₂ showed no effervescence
	Sample taken:	none
Layer 2	Horizon: B2	
0.15 - 0.50 m	Texture:	clay
	Colour:	(reddish brown) (5YR 4/8) [moist] with no recorded mottles
	Structure:	moderate pedality (fabric is smooth-faced peds)
	Coarse Fragments:	not evident,
	Pans:	not evident
	Segregations:	not evident,
	Soil fauna:	Activity is nil
	Cracks/Macropores:	Cracks are nil, macropores are nil
	Moisture/Consistence:	dry, slightly plastic, moderately sticky, texture modifier test result was no change,
	Field chemical tests:	Field pH is 7.0 (Not recorded), H ₂ O ₂ showed no effervescence
	Sample taken:	none

LABORATORY TESTS

None available

For information on laboratory test data and units of measure, please see: [Soil survey standard test methods](#)

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